



## Patent Technology Centers

### Facsimile Transmission

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#### Fax Notes:

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Mr. Bailey,  
The following is a proposed amendment to alleviate a printer-rush in publications (for 10/594,594). The multiple dependency of claim 9 has caused the problem. Accordingly, the proposal puts claim 9 into independent form. There is also a minor fix for claim 20. Please let me know if this is acceptable to enter as a supplemental examiner's amendment.

Sincerely,  
Michael J Feely (Primary Examiner; AU 1796; 571-272-1086)

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***Clean Version***

9. (Currently Amended) An epoxy resin composition comprising 100 parts by mass of an epoxy resin and 0.1 to 100 parts by mass of an amine hardener, which is selected from the group consisting of:

an amine hardener (C), a microcapsule type hardener (D), and a master batch type hardener (F);

wherein the amine hardener (C) comprises: an amine adduct (A) and a low molecular weight amine compound (B) as major components; wherein the amine adduct (A) is obtained by a reaction between an epoxy resin (a1) and an amine compound (b1) and has a molecular weight distribution, which is defined by the ratio of the weight average molecular weight and the number average molecular weight, of 3 or lower, and wherein the content of the low molecular weight amine compound (B) is 0.001 to 1 part by mass, based on 100 parts by mass of the amine adduct (A);

wherein the microcapsule type hardener (D) comprises: a core and a shell; wherein said core comprises the amine hardener (C); and wherein said shell contains a synthetic resin or an inorganic oxide; and

wherein the master batch type hardener (F) comprises: a hardener selected from the amine hardener (C) and the microcapsule type hardener (D), an epoxy resin (E), and a highly soluble epoxy resin (G); wherein the highly soluble epoxy resin (G): has a solubility parameter of 8.900 to 12.00; has a molecular weight between crosslinked points after hardening of 105 to 150; and is contained in an amount of not lower than 0.1% by

Proposed Supplemental Amendment for: 10/594,594  
(Attorney Docket No. 0152-0743PUS1)

weight, based on the epoxy resin (E); and wherein the total chlorine amount of said master batch type hardener (F) is not higher than 2000 ppm.

20. (Currently Amended) A master batch type hardener (F) for an epoxy resin comprising: the amine hardener (C) according to claim 1, an epoxy resin (E), and a highly soluble epoxy resin (G);

wherein the highly soluble epoxy resin (G): has a solubility parameter of 8.900 to 12.00; has a molecular weight between crosslinked points after hardening of 105 to 150; and is contained in an amount of not lower than 0.1% by weight, based on the epoxy resin (E); and wherein the total chlorine amount of said master batch type hardener (F) for an epoxy resin is not higher than 2000 ppm.

Proposed Supplemental Amendment for: 10/594,594  
(Attorney Docket No. 0152-0743PUS1)

***Marked-up Version***

9. (Currently Amended) An epoxy resin composition comprising 100 parts by mass of an epoxy resin and 0.1 to 100 parts by mass of an amine hardener, which is selected from the group consisting of:

an the amine hardener (C) according to claim 1, a the microcapsule type hardener (D) according to claim 19, and a the master batch type hardener (F) according to claim 5;  
or the master batch type hardener (F) according to claim 20;

wherein the amine hardener (C) comprises: an amine adduct (A) and a low molecular weight amine compound (B) as major components; wherein the amine adduct (A) is obtained by a reaction between an epoxy resin (a1) and an amine compound (b1) and has a molecular weight distribution, which is defined by the ratio of the weight average molecular weight and the number average molecular weight, of 3 or lower, and wherein the content of the low molecular weight amine compound (B) is 0.001 to 1 part by mass, based on 100 parts by mass of the amine adduct (A);

wherein the microcapsule type hardener (D) comprises: a core and a shell;  
wherein said core comprises the amine hardener (C); and wherein said shell contains a synthetic resin or an inorganic oxide; and

wherein the master batch type hardener (F) comprises: a hardener selected from the amine hardener (C) and the microcapsule type hardener (D), an epoxy resin (E), and a highly soluble epoxy resin (G); wherein the highly soluble epoxy resin (G): has a solubility parameter of 8.900 to 12.00; has a molecular weight between crosslinked points after hardening of 105 to 150; and is contained in an amount of not lower than 0.1% by

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weight, based on the epoxy resin (E); and wherein the total chlorine amount of said master batch type hardener (F) is not higher than 2000 ppm.

20. (Currently Amended) A mater batch type hardener (F) for an epoxy resin comprising: the amine hardener (C) according to claim 1, an epoxy resin (E), and a highly soluble epoxy resin (G);

wherein the highly soluble epoxy resin (G): has a solubility parameter of 8.900 to 12.00 ~~12.00~~; has a molecular weight between crosslinked points after hardening of 105 to 150; and is contained in an amount of not lower than 0.1% by weight, based on the epoxy resin (E); and wherein the total chlorine amount of said master batch type hardener (F) for an epoxy resin is not higher than 2000 ppm.

**Comments:**

- The multiple dependency of claim 9 has raised an issue in publications.

Accordingly, the above amendment puts claim 9 into independent form, wherein an amine hardener is *selected from the group consisting of:*

- *an amine hardener (C) (according to claim 1),*
- *a microcapsule type hardener (D) (according to claim 19), and*
- *a master batch type hardener (F) (according to claim 5 or claim 20).*

The limitations of claims 1, 19, 5, and 20 have been added to claim 19.

- Furthermore, the mater batch type hardener (F) has been consolidated to one comprising:

- a hardener selected from the amine hardener (C) and the microcapsule type hardener (D),
- an epoxy resin (E), and
- a highly soluble epoxy resin (G).

The only difference between the master batch (F) of claim 5 and claim 20 is that: the master batch (F) of claim 5 features (D) as the hardener, and the mater batch (F) of claim 20 features (C) as the hardener.

- Claim 20 has been amended to address a minor informality. “12:00” has been replaced with —12.00—.